UCLA CIRM Institute

Grant Award Details

UCLA CIRM Institute

Grant Type: Major Facilities

Grant Number: FA1-00613

Investigator:

Name:	Gene Block
Institution:	University of California, Los Angeles
Type:	PI

Award Value: $19,854,900

Status: Closed

Grant Application Details

Application Title: UCLA CIRM Institute

Public Abstract:

OVERVIEW: The CIRM Facility will support ~19K+ ASF of laboratory and vivarium not subject to federal human embryonic stem cell (hESC) restrictions including: 1) Research labs, 2) Core facilities, and 3) Career Development space. The Facility is adjacent to biology, chemistry, engineering, medicine, and clinical/translational programs, including our Stem Cell Center (SCC), FDA compliant GMP facility & CIRM Shared Research Laboratory (SRL), our Hospital, Cancer Center, Professional Schools, AIDS Institute, and the College of Letters and Science and formal inter-institutional scientific collaborations.

MAJOR PROGRAMS across Elements X, Y, and Z, include: 1) role of stem cells in hematopoiesis, vascular biology, immunotherapy for cancer and related diseases, and immune deficiencies, 2) analyses of hESC, epigenetic regulation and pluripotency, and 3) understanding epithelial stem cells including neural, cardiovascular, and skin types in normal and abnormal development. Programs include our engineered immunity consortium that will express T cell receptor genes in hematopoietic stem cells to produce cellular immunity to combat cancer and related diseases. Our neural stem cell group uses hESC derived cells to model genetic and injury-induced neurological diseases. Such projects will interact with our clinical research programs to conduct cell based human trials. Major scientific collaborations to develop new ultrasensitive diagnostic and therapeutic technologies for stem cells include the Nanosystems Biology Cancer Center Program.

CORES: The Facility includes core laboratories to provide technical and developmental support for the programs including, computational & bioinformatics analysis of stem cells; advanced cell separation technologies; bioengineering for stem cell growth including organ scaffolds; advanced & vital microscopy; advanced mouse genetics; and vector production. The cores complement existing cores directly adjacent to the Facility for small molecule screening, hESC derivation and banking, GMP and the CIRM funded SRL.

FACULTY:The Facility will house up to 15 stem cell investigators including 8 CIRM grantees. The location will facilitate interactions with other stem cell researchers. The Facility will also provide much needed space for the career development of young clinical faculty and the recruitment of 3 new stem cell scientists with important expertise.

Our institution, with its college and 11 professional schools, receives ~$914M in extramural research support which has a major economic effect throughout the region. The Facility will build upon a strong foundation of basic and clinical research and further solidify on-going institutional collaborations including research and joint training programs. The Facility will further link the activities of two premier research universities in the Los Angeles area, and drives the important goal of bringing hESC science and technology from the laboratory to the bedside.

Statement of Benefit to California:	The proposed interdisciplinary, high technology, CIRM Facility will support laboratories, and innovative core services in the conduct of human embryonic stem cell (hESC) research unimpeded by federal restrictions. UCLA and California Institute of Technology scientists will join forces in such work. The availability of such resources will in turn lead to new insights that will further increase the prominence of California as a leader in hESC research. The research programs, core services, and young faculty development offered in the Facility will provide essential resources and mentoring of researchers trained to work with hESC, thus ensuring the increased availability of a skilled academic and industry workforce to fill jobs in academia as well as the private biotechnology and pharmaceutical industry. These individuals will be a valuable resource for California institutions and serve as an important incentive for others to relocate here. The Facility is designed to integrate basic and translational research with the goal of translating laboratory discoveries to patient care. The Facility based stem cell programs promote collaboration of intra- and extra-mural researchers and embrace physician scientists with the intent of bringing regenerative medicine and hESC based diagnostics to the clinic. As described in the application, laboratories with critical core services will provide unique support for hESC research and develop new technologies intended to decrease the time and costs of bringing scientific discoveries to patients. This “bench to bedside” philosophy is consistent with our established track record of applying basic research to treat diseases. Thus, in addition to the direct benefit to patients and their families, the use of hESC to treat chronic diseases could reduce health care costs.